

From the foregoing key it is apparent that the new species here described belongs in the vicinity of *H. flavipes* and *H. psilotes*. From the former, of which I have seen a male specimen, it is easily distinguished by the characters given in the key. I have not seen the Mexican *H. psilotes*; to judge from the description, it comes very close to *H. bradleyi*. No mention is made by Osten-Sacken of the pollinose bands of thorax and abdomen which are so striking a feature of *H. bradleyi*; yet, it is not impossible that the unique specimen of *H. psilotes* was poorly preserved and rubbed, so that the two species may be more similar than would seem from the descriptions.

SYNONYMICAL AND OTHER NOTES ON SOME SPECIES OF THE FAMILY CHRYSOMELIDÆ AND DESCRIPTIONS OF NEW SPECIES.

BY CHAS. SHAEFFER,

BROOKLYN, N. Y.

The extent of variation of some species of the family Chrysomelidæ as given in the latest revisions, etc., was never satisfactory to me. Rearranging the material in some overcrowded boxes lately and studying the species of some genera more critically I became fully convinced that my surmise was correct and that some of the names placed in synonymy or given as varieties at present have to be restored to specific standing. However, I could do this in a very few instances only, as the original descriptions are too poor and I could not see the Leconte types at present. I will undertake a revision of at least two of the genera, *Donacia* and *Disonycha*, in the near future.

Donacia s. g. *Pæcilocera* new subgenus.

Our species of *Donacia* are divisible into the two recognized subgenera. Those of Mr. Leng's groups *A*, *B*, and *C* belong to *Donacia* proper and those of group *D* to the subgenus *Plateumaris* Thoms. These of the latter subgenus are more similar in form than those of the subgenus *Donacia* and all possess a very good character in the distinct sinuation of the sutural margin of elytra near apex to separate

them readily.¹ In *Donacia harrisi* we would have a disturbing element if placed in either of the two subgenera. However, this species possesses a unique character not present in any other species and that is the third antennal joint distinctly longer than the fourth in both sexes. In all our other species the third antennal joint is mostly shorter than or subequal to the third. The head is scarcely constricted behind causing the less prominence of the eyes; the posterior femora of the male are armed with one large tooth and several small teeth or denticles on the inner margin and the hind tibiæ are feebly angulated internally about one third from apex, which may also be termed feebly emarginate with a few, feeble denticles or tubercles within the emargination. The female has the posterior femora mutic and the posterior tibiæ are not emarginate or subangulate near apex but have the inner side more or less distinctly tuberculate, the tubercles at most small. The posterior femora of both sexes are robust but rather feebly clavate. The first ventral segment is a little longer than the metasternum in both sexes and about as long as the next three ventral segments.

The principal characters separating the three subgenera are:

1. Sutural margin of elytra entire to apex.....**Donacia**
Sutural margin of elytra distinctly sinuate near apex.....2
2. Third antennal joint longer than fourth; head feebly constricted behind the eyes; posterior femora of male with a moderately large, acute tooth and a variable number of denticles along the inner margin, posterior tibiæ feebly emarginate one third from apex, feebly tuberculate within the emargination; posterior femora of female mutic, posterior tibiæ not emarginate near apex but feebly tuberculate near the inner margin. Vaginal plates of the female equal, subtruncate or feebly emarginate at apex, both plates of equal size, that is, the lower one not longer and not produced into a sharp point at middle.....**Pœcilocera**
Third antennal joint shorter than fourth; head strongly constricted behind the eyes; posterior femora of male with a single distinct tooth and no denticles; posterior tibiæ not emarginate near apex and without denticles in either sex. Vaginal plates of the female subequal; the upper one narrower and shorter than the lower one, the latter produced at middle of apex into a more or less sharp point, the edges either very finely or coarsely serrated**Plateumaris**

¹ Mr. Leng in his revision attributes this character to *distincta* also but I am unable to see it in any of the numerous specimens which I have examined.

The vaginal plates of the females of the species of the subgenus *Plateumaris* are easily seen and generally protruded and are different from the species of the other two subgenera as far as I was able to see them without dissection. The lower plate is much longer than the upper and more or less obliquely narrowing to apex into a sharp point, the sides rather sharp or finely and sometimes coarsely serrate which would indicate that it is used as an ovipositor or rather a tool to make slits in stems of plants in which the eggs are deposited; also a different way of oviposition than those of the other species of *Donacia* which have the plates similar to those of the females of the subgenus *Pacillocera*, described in the table. If the vaginal plates are similar in structure in all the species of the subgenus *Donacia* it would perhaps be justified to give *Plateumaris* generic standing as is done in Europe. However, in a female of *pubicollis* the apex of lower plate protrudes very faintly but seems to be sharply pointed.²

***Donacia proxima* Kirby.**

var. *episcopalis* Lac.

var. *californica* Lec.

Donacia proxima should perhaps be listed as more than a var. of *cincticornis*, though it is more closely related to the latter than to any other species. *D. cincticornis* has always much longer femora than *proxima*, which in the male reach beyond the apex of the elytra, while in *proxima* they extend only to the apex of the fourth ventral segment; in the female of *cincticornis* the posterior femora extend to the apex of the fourth ventral segment, in *proxima* to the third, the prothorax is more transverse and the outer apical angle of elytra is generally broadly rounded in *proxima*.

I have a few specimens from N. Y., N. J. and Pa. which agree closely with Lecordaire's description of *D. episcopalis*. It is placed as a synonym of *proxima* but while closely related it seems entitled to be recognized as a var. of *proxima*. It is always smaller, the pro-

² While this paper was in the hands of the printer, Mr. Schwarz in a letter called my attention to his paper on the ovipositor of the females of the subgenus *Plateumaris* published in Proc. Ent. Soc. Wash. vol. III, p. 24, where figures are given of the ovipositor of three different species. Fig. a, is what I described further on as *D. serricanda* and the form of ovipositor is unique as well as that of *D. rufa* (fig. b), the rest of the species have an ovipositor similar to *D. emarginata* (fig. c).

thorax less transverse and more or less distinctly, though finely, alutaceous and often with exceedingly fine undulating rugæ on the disk; the third antennal joint is generally relatively longer than in *proxima*. It superficially resembles *cincticornis*, but the color of the upper surface seems to be generally blue or blackish blue as in *proxima*, and the prothorax is alutaceous and somewhat dull but shining in *cincticornis*, the posterior femora of both sexes are as in typical *proxima*; that is, shorter than in *cincticornis*.

The var. *californica* agrees in all structural characters with *proxima* but differs in having the upper surface entirely metallic green, cupreous or æneous and the elytra more coarsely and closely punctate. It seems to occur only in the West, the specimens which I have seen are from Idaho, Br. Columbia and California.

Donacia magnifica Lec.

This with *proxima* is made a variety of *cincticornis* but is distinct from either and should be given specific standing. The head and the eyes are relatively smaller, the prothorax is of different form and always rather coarsely punctate; the inner, smaller tooth of the posterior femora of the male, distant in *proxima* and *cincticornis*, is in *magnifica* very near and almost opposite the larger tooth and the last dorsal segment of the female is shorter and rotundate-truncate at apex.

Donacia rufescens Lac.

This is not a var. of *hypoleuca* Lec. but a distinct species. It is always much smaller, prothorax relatively shorter and more transverse, less distinctly alutaceous in the female, but more or less shining in the male. The elytra more or less shining in the male but distinctly alutaceous and dull in the female. The posterior femora are shorter and more strongly clavate with a relatively stouter tooth and the last ventral segment of the female is narrowly emarginate at apex. The emargination of the last ventral segment of the females of this species is unique and does not seem to occur in any of our other species. It is variable, in some specimens the emargination is deep, triangular in others faint. Fully colored females are blue or greenish blue above.

In *hypoleuca* the prothorax in both sexes is distinctly alutaceous

and dull and nearly as long as wide and the elytra are very shining in both sexes; the posterior femora of the male are moderately clavate and extending beyond the apex of elytra, in the female to the apex of the fourth ventral segment. The mesosternal process is longer and more parallel than in *rufescens* and the last ventral is feebly sinuate-truncate at apex.

Donacia texana Cr. is possibly also a good species and not a synonym of *hypoleuca* if my identification of a specimen from New Braunfels, Texas, as that species is correct. The third antennal joint in this specimen is decidedly shorter than in *hypoleuca* the prothorax shorter and more transverse with the posterior angles less prominent, the posterior femora strongly clavate and the legs and antennæ dark. This specimen, a male, looks superficially much like *palmata* and has the prothorax in form and sculpture very similar to that species but the posterior femora are longer, armed with a single, acute tooth and the first joint of anterior tarsi is not dilated.

***Donacia parvidens* new species.**

Female.—Moderately elongate and slightly more robust than *cincticornis*. Head and prothorax coppery bronze, elytra castaneous, shining with a more or less distinct bluish tint; underside paler than the elytra and clothed densely with short, silvery pubescence; antennæ black or piceous; all the femora pale but more or less blackish above, tibiæ more or less blackish on outside. Head feebly shining, closely punctate with moderate punctures, median line deeply impressed; antennæ moderate reaching back to about the middle of elytra, third joint shorter than first but distinctly longer than the second, fourth about as long as the first. Prothorax subquadrate, anterior angles distinct but scarcely prominent, posterior angles moderately prominent, lateral tubercles obsolete, lateral margin not narrowing from apex to about basal fourth, then rather strongly convergent to base, sides moderately constricted at middle; surface feebly shining, finely alutaceous, rather sparsely punctate with fine punctures; median line distinctly and moderately deeply impressed from apex to base, near the latter a shallow, broad depression. Elytra depressed, a little more than twice as long as wide at base; surface shining, punctures of the regular rows moderately large, intervals subconvex and scarcely strigose; apex truncate or subtruncate. Mesosternal process about as wide as long between the coxæ; posterior femora rather short, though slender, reaching to or a little beyond the apex of the second ventral segment, feebly clavate and armed below with a feeble tooth. Length 8.5 mm.

Male.—As usual with slightly longer posterior femora, the tooth a little longer, slightly longer antennal joints, prothorax a little more shining and scarcely alutaceous and mesosternal process a little narrower.

Yaphank, Lg. Isld. (female type), Lahaway and Lakehurst, N. J.

I have seen ten specimens collected by myself at Yaphank and Lahaway, by Messrs. Davis and Leng at Lahaway and at Lakehurst by Mr. Davis.

This distinct species, for which I could not find a description, is apt to be confused with *cincticornis*. However, the antennæ are heavier, the prothorax has a different shape and sculpture, the posterior femora are much shorter and have only a single, feeble tooth in both sexes, the last dorsal segment of the female is less elongate and subtruncate or broadly rounded at apex and the mesosternal process is narrower than in *cincticornis*.

Donacia edentata new species.

Female.—Form depressed, nearly as in *palmata* but smaller. Head and prothorax coppery bronze, the latter distinctly and very finely alutaceous and dull; elytra shining, castaneous with a more or less distinct bluish-green, metallic tint; underside paler, femora above more or less blackish; antennæ dark above and pale beneath. Head densely punctate with moderate punctures, median line deep, without frontal tubercles; antennæ reaching backwards beyond the middle of elytra, third joint longer than second and a little shorter than fourth but about equal in length to the first joint. Prothorax slightly wider than long, sides more or less undulate; anterior angles obtuse, not prominent; lateral tubercles obsolete; basal angles moderately prominent; median line entire and deeply impressed ante-basal impression shallow; surface dull, finely alutaceous at middle, more coarsely so at sides, finely and sparsely punctate. Elytra depressed, nearly four times as long as the prothorax and a little longer than twice as long as wide at base; apical angles truncate; punctures of the regular rows moderate, intervals smooth and shining, feebly convex. Body below very finely and densely punctate and covered densely with short white pubescence. Posterior femora moderately elongate and rather feebly clavate, without tooth. Mesosternal process slightly longer than wide. Last ventral segment broadly rounded at apex; last dorsal moderately elongate, narrowing to apex, the latter narrowly truncate or rotundate-truncate. Length 9 mm.

Male.—Smaller and slightly narrower, with longer antennal joints and posterior femora, the latter also without tooth; last dorsal truncate-emarginate at apex. Length 7 mm.

Crum Lake, N. Y. (Wm. T. Davis), Centerton, N. J. (Chas. Lieback), found on *Nymphæa odorata* by Mr. Wm. T. Davis.

This species is very distinct from any other known so far. By description and superficially it resembles *parvidens* somewhat, but the

form is more elongate, the prothorax always dull, the antennal joints longer and narrower, the posterior femora in both sexes longer and without tooth. In one of the males an exceedingly small, feeble tubercle is visible on the posterior femora.

Donacia glabrata new species.

Male.—General form of *subtilis* with similar prothorax, metallic green, shining, elytra without transverse rugæ on disk, prothorax with a deeply impressed median line; legs reddish, apical half or so metallic, posterior femora without tooth. Head densely punctate, punctures finer than those on prothorax; median line deeply impressed; moderately tuberculate on each side of median line; antennal joints longer and narrower than in *subtilis*; third joint shorter than in *rugosa*, though the outer joints are longer than in that species. Prothorax almost as in *subtilis*, anterior angles not prominent, obtuse, posterior angles moderately prominent; median impression wide and deep, basal impression distinct but less deep; lateral tubercles indistinct; surface rather coarsely and sparsely punctate at middle, punctures denser at apex and base and at sides more or less confluent and transversely strigose. Elytra a little more than three times as long as prothorax and about twice as long as wide at base; punctures forming the regular rows relatively large, intervals not or scarcely wider, smooth, shining and with scarcely any transverse rugæ on the disk which are present at sides and near apex, the latter rotundate-truncate. Body below moderately densely pubescent, pubescent short and white; legs reddish; femora in about apical half metallic, posterior femora moderately strongly clavate, rather sparsely punctate and without tooth; last dorsal segment emarginate-truncate at apex. Length 7 mm.

Clementon, N. J.

This species by its form resembles closely *subtilis*, from which it differs in its smooth, shining surface, longer antennal joints, bicolored, more shining and more sparsely punctate femora, the posterior one without tooth. *Rugosa* has also bicolored posterior femora, which is feebly toothed in the male, but *glabrata* is more slender, with shorter third antennal joint and all the joints black, the outer ones longer than in *rugosa*, the prothorax with very few punctures on the disk, median line deeply and rather broadly impressed, and elytra smooth, shining with scarcely any transverse rugæ on the disk.

Donacia megacornis Blatchley.

This species was described from a single specimen from Indiana but I have specimens from Lakehurst, Lakewood. Pt. Pleasant, N.

Lisbon and Anglesea, N. J., and in Mr. Leng's collection are specimens from Massachusetts and Iowa.

The species is rather short, robust, not elongate and slender as Mr. Blatchley describes it; prothorax about as long as wide, tubercles at most moderately distinct; sides less narrowed toward apex than in *subtilis* and surface more coarsely punctate. Elytra with distinct impressions, the latter generally less deep than in *aqualis*; apices squarely truncate. Body beneath clothed densely with short, yellowish pubescence; the posterior femora in both sexes with a rather large, triangular tooth, which is more or less distinctly serrulate posteriorly. The antennal joints are stouter than in any other species known to me. The last dorsal segment is emarginate-truncate at apex in the male and broadly rounded in the female.

I have seen the type of this species, which Mr. Blatchley kindly sent me for examination.

Donacia liebecki new species.

Female.—Similar in form to *megacornis* but less convex, antennæ less stout, elytral impressions more feeble and posterior femora with a small, sharp tooth in both sexes. Head densely punctate, punctures much smaller than those on prothorax; median line deeply impressed; frontal tubercles obsolete; antennæ annulate, rather short, not extending to the middle of elytra, second and third joint short, equal, fourth a little longer than third. Prothorax as wide as long, not or at most feebly narrowing to base; anterior and posterior angles distinct and feebly prominent; lateral tubercles obsolete; sides feebly undulate; median line and basal impression feeble; surface sculptured as in *subtilis*. Elytra about three and one half times as long as prothorax and about twice as long as wide at base; apices sharply truncate; punctures of the regular series moderately large; intervals moderately coarsely rugose. Body beneath densely and finely punctate and moderately densely clothed with short yellowish-white pubescence; mesosternal process longer than wide at apex; legs reddish, posterior femora moderately clavate and armed with a small acute tooth. Last dorsal segment emarginate at apex. Length 7.25 mm.

Male.—Narrower than the female with longer antennal joints and last dorsal segment broadly emarginate, posterior femora with a small, acute tooth.

Wyandanch, Lg. Isld.; Lakehurst and Malaga, New Jersey.

I have seen eleven specimens collected on Long Island and at Lakehurst, N. J., by Messrs. Davis, Schott and myself, and the specimens from Malaga, N. J., were received from Mr. Chas. Liebeck,

whose name I have given it in recognition of many favors received. It resembles *megacornis* more than any other of our species but differs from that by more depressed form, less stouter antennal joints, posterior femora moderately clavate with a small acute tooth in both sexes and mesosternal process a little narrower.

The males look much like very small females of *subtilis*, but have shorter antennæ, a little more convex and shorter form, reddish legs, narrower and more elongate prothorax and more prominent eyes. If compared with the males of that species the differences are obvious enough.

***Donacia tuberculifrons* new species.**

Female.—Oblong-oval, shining, æneous, feebly depressed. Head densely punctate, punctures smaller than those on prothorax; median line deeply impressed; frontal tubercles very distinct; antennæ black; scarcely reaching to the middle of elytra, second and third joints small, the latter a little longer than the former, fourth subequal to second and third together. Prothorax about as wide as long; anterior angles distinct, not prominent, posterior angles prominent; anterior tubercles nearly obsolete; sides feebly narrowing to base and scarcely undulate; median line distinct; basal impression feeble; surface moderately coarsely punctate; punctures well separated on the disk, more crowded near the impression, at apex and at sides, confluent at the latter and strigose. Elytra about three and one half times as long as the prothorax and about twice as long as wide at base; punctures of the regular series moderately large; intervals rather feebly transversely rugose on the disk; apices truncate; last dorsal broadly rounded. Body beneath densely and finely punctate and clothed with very short white pubescence, which does not obscure the æneous surface color. Legs æneous, posterior femora moderately clavate and armed with a small tooth. Mesosternal process narrow, a little longer than wide. Length 8 mm., width, across base of elytra, 3 mm.

Male.—Slightly narrower, tooth of posterior femora a little longer, last dorsal segment feebly emarginate-truncate.

Toronto, Canada, (type) Northern Illinois.

The Toronto specimens I owe to the kindness of Mr. Chas. Liebeck.

This species is of more robust form than either *subtilis* or *distincta* with different prothorax and shorter antennæ. It has the antennæ similar to *liebecki* above described but the head in the latter is strongly constricted behind the eyes, which are much more prominent than in *tuberculifrons*, which has the prothorax more convex and shining and the intervals of the elytra are feebly rugose on the disk, the posterior

femora rather feebly clavate and longer, reaching to or slightly beyond the apex of the fourth ventral, in *liebecki* to about the third ventral segment.

***Donacia distincta* Lec.**

I can not convince myself that the specimens under that name in every collection I have seen are the true *distincta*, including the specimen sent me by Mr. Frost and compared by him with the type, a so-called homotype. They do not agree with Leconte's group characters. Leconte places *distincta* and *hirticollis* in a separate group defined as follows: "Crassiusculæ, elytris apicem versus magis angustatis, thorace punctato tuberculatoque, elytris valde rugosis, antennis minus elongatis, articulo tertio secundo paulo brevior." Taking *hirticollis* as guide, the shorter, more robust form, the elytra more strongly narrowing towards apex and the shorter antennæ are evidently the principal characters of the group, but which scarcely could be applied to these so-called *distincta*. Leconte under his description of *distincta* also says "habitus fere *D. proximæ*" but the two are certainly widely different in form. The type specimen of *distincta* came from Lake Superior and ought to be still in Leconte's collection.

Mr. Leng was correct when he stated that he was unable to separate *torosa* Lec. from these so-called *distincta*. The color varies in these and the sculpture of the prothorax is much more variable than in any other species of the subgenus *Donacia*. I have seen over fifty specimens of this from various localities ranging from Massachusetts to Florida. The prothorax may be more or less densely punctate with rather coarse punctures which are sometimes more or less transversely confluent, especially laterally or very finely and sparsely punctate with more or less distinct and very finely impressed wavy lines. The two extremes look certainly distinct from each other but intermediate forms are there which prohibit the establishment of even a variety. The color of the antennæ, the relative length of the joints, especially the second and third, and the distinctness of the frontal tubercles is also variable. I have a specimen which is black above with antennal joints red except the first, which is metallic. As already stated elsewhere the sinuation of the sutural margin of the elytra near apex, mentioned by Mr. Leng in his revision, I am unable to see in any of the specimens examined.

Donacia tuberculata Lec.

This species has the head behind the eyes a little more constricted than in *harrisi* but less so than in any of our other species. The smaller eyes of *harrisi* mentioned by Leconte and others as a peculiar character is shared by other species of both subgenera but with the exception of *tuberculata* the head in these is more strongly constricted behind which gives them a more prominent appearance.

Donacia harrisi Lec.

It may be of interest to those using Mr. Blatchley's Coleoptera of Indiana to know that the species identified there as *harrisi* is not that species. It is a new species belonging in the subgenus *Plateumaris*. In reading over his description and remarks on that species I received the impression that this species is much more variable than known and asked Mr. Blatchley for the loan of a few specimens. He kindly sent me a single specimen, all he had, which proved to be as stated above.

Donacia pusilla Say.

As defined by Mr. Leng in his revision a number of more or less distinct forms are included under this name.

Of the true *pusilla* I have specimens from New Foundland, Maine and Massachusetts. These have the second and third antennal joints subequal in length, the fourth a little longer than third, the outer four or five joints very distinctly wider than the preceding joints, especially in the male, the elytral indentations generally deeply impressed, the posterior femora moderately closely punctate and armed with a rather small tooth. There is another eastern species which I find generally mixed with this and which probably is *dives* Lec., placed as a synonym of *pusilla*. These have longer antennal joints and the outer four or five are scarcely wider than the preceding; the prothorax is similar, but generally a little wider; elytra with feeble indentations and generally more densely punctate and rugose; the posterior femora are stouter, closely punctate and armed in both sexes with a rather large, triangular tooth. The legs in both are red, femora with or without metallic space near apex. Certain *emarginate* with rugose prothorax and median line very feeble may cause trouble as to their correct place, but these have generally a still larger tooth on the

posterior femora, which latter is always uniformly metallic, at least in all the numerous specimens which I have examined, the prothorax is slightly longer, with distinct anterior tubercles and the head behind the eyes is more deeply constricted with a narrower neck.

I have seen specimens of what I consider to be *dives* Lec. from New Foundland, Maine, Connecticut, New York and New Jersey.

The western specimens from Cal., Oreg., etc., which are probably *pyritosa* Lec. do not seem to differ very much from typical *pusilla*.

***Donacia pusilla* var. *robusta* new var.**

Female.—More robust and much larger than typical *pusilla*; antennæ annulate, similarly formed; prothorax wider and less distinctly narrowed to apex and rather more coarsely rugose; elytral indentations less pronounced; legs reddish, posterior femora with a small tooth. Length 7 mm., width 3.2 mm.

Como, S. Wyoming.

Paratype in coll. C. W. Leng.

This form looks very distinct from typical *pusilla* but I am unable at present to find a strong enough character to give it specific standing.

***Donacia femoralis* Kirby.**

This species was described from Nova Scotia but Mr. Leng in his revision gives only Washington and Vanc. Isld.

I haven't seen anything from the East which fit Kirby's description except *metallica* and it is possible that the two are the same. Specimens from California, Washington, Br. Colombia, etc., standing under that name are possibly *germari* placed with *flavipennis* as synonym of *femoralis*. The descriptions of *germari* and *flavipennis* are so poor that it is impossible to identify them and I have seen no specimens from Alaska, the type locality for both.

***Donacia serricauda* new species.**

Female.—Cupreous, form nearly as in *flavipes*, antennæ black, reddish at base; legs reddish, femora with a more or less distinct metallic cloud. Head densely punctate and sparsely pubescent; median line deep; frontal tubercles absent; ocular orbits absent; antennæ extending back to about basal fourth, second joint shorter than third, the latter about as long as the basal joint, fourth joint a little longer than third, outer joints scarcely wider than the preceding. Prothorax as wide as long; narrowing towards base; anterior

angles distinct and moderately prominent; anterior tubercles distinct; sides feebly undulate; surface slightly uneven; median impression absent; basal impression distinct; surface alutaceous and finely and rather sparsely punctate; punctures more dense at middle and larger at apex and base. Elytra about three times as long as the prothorax and a little more than twice as long as wide at base; punctures of regular series moderate, intervals rather feebly rugose on the disk, more distinctly so at sides and apex; sutural margin near apex sinuate; apices separately rounded. Body beneath cupreous; thinly clothed with short, cinereous pubescence; posterior femora with a moderate, triangular tooth. Apex of the lower vaginal plate relatively coarsely serrate. Length 7.25 mm.

Male.—Differs only in being narrower with slightly longer antennal joints; tooth of posterior femora scarcely larger than in the female.

The type is from Stephenville, New Foundland, collected by George P. Engelhardt. It is taken in Maine by Mr. C. A. Frost and I have also a specimen from Montana, British Colombia and Wyoming and Mr. Davis has taken a specimen in Lakehurst, N. J. A very distinct species by its form and sculpture of prothorax and the only species known to me which have the lower vaginal plate of the female coarsely serrate at apex. In all the other species the serration is either absent or very fine.

Zeugophora neomexicana new species.

Black; head, prothorax and legs reddish-yellow; outer joints of antennæ picuous or black. Head moderately densely punctate. Prothorax more sparsely punctate than the head; lateral tubercle moderately prominent, lateral margin above the tubercle straight, not obliquely narrowing to the apical angles. Elytra sparsely pubescent; punctures larger than those on the pronotum, well separated on the disk, closer at sides. Length 3 mm.

Santa Fe, New Mexico.

In most of the specimens of the small series before me the head above is a little darker than the prothorax and in two, from the same locality, is black above.

This species is probably mixed with *scutellaris* or those with the head black above with *consanguinea*. But *scutellaris* has a wider prothorax with the lateral tubercles more prominent, the lateral margin above the tubercles narrowing slightly to the apical angles which latter are indistinct and slightly rounded; the antennal joints are a little heavier and the size is generally larger. From *consanguinea* it differs in having the lateral tubercle of prothorax distinct,

that is, the lateral margin is straight from the base of the tubercle to the apex while in *consanguinea* the lateral margin is narrowing obliquely from the tubercle to the apex.

Lema arizonæ new species.

Very near *L. texana* Cr. in form and color, except mouth parts, mesosternum, side pieces of metasternum and legs black. Head sparsely punctate, frontal tubercles obliterated; median groove short and not very deep, terminating in a rather deep fovea. Prothorax in sculpture and form as in *texana* Cr. Scutellum slightly subquadrate and emarginate at apex. Elytra blue with ten regular rows of rather coarse punctures, the punctures a little smaller towards apex; intervals smooth. Abdomen finely and densely punctate; clothed with short, greyish-white hairs; posterior femora extending to the apex of the third ventral segment and slightly more incrassate than in *texana* Cr. Length 5.25 mm.

Huachuca Mts., Arizona.

Lema longipennis, Linell, to which this species also seems to be allied, has the underside of body and head black and an elongate scutellum with the apex rounded.

Lema equestris Lac.

Lacordaire's description of this Mexican species agrees fairly with those specimens of the variable *L. balteata* Lec., which have the prothorax red, to which I have already called attention in Science Bull. Mus, Brookl. Inst. Arts and Sciences, vol. I, p. 169. *L. balteata* has the head, prothorax, legs and underside black, abdomen flavous, elytra blue with a large, yellowish or reddish-yellow, transverse fascia as in *L. solani*, the lateral margin is blue but always interrupted by the transverse fascia. The transverse fascia is generally broad but I have specimens with very narrow fascia and one specimen with an indistinct fascia on one side and without fascia on the other side. A number of my specimens have in addition to the transverse fascia either one or two yellow subapical spots on each elytron. These subapical spots are of variable size and are coalescent in some specimens, forming a slightly arcuate subapical fascia. The specimens with red prothorax, of which I have taken only a very few, generally have the subapical fascia distinct. In about three of my specimens the prothorax is black with apex and base more or less red, these are intermediate between those with red and black prothorax.

All the different color forms are often found together on the same plant and interbreed. I have taken a male with red prothorax in copula with a female with black prothorax.

If Lacordaire's *equestris* should prove to be the same as *balteata* the latter name becomes a synonym.

Lema opulenta G. & H.

Lema ornata Baly.

Lema lebioides Linell.

In Proceedings of the U. S. Nat. Mus., vol. XX, p. 474, Linell described *L. lebioides* from a single specimen taken by Prof. Townsend in Brownsville, Tex. I have taken a moderately large number of this species near Brownsville, Texas, but I am unable to find anything in Baly's description of his *ornata* to differentiate the two. The head and prothorax may be entirely reddish or more or less black or piceous; the lateral vitta of each elytron is internally dilated at its posterior end but does never extend to the apex nor does it unite with the common sutural spot at the extreme apex. The dilated portion of the vitta sometimes extends to the suture or the vitta may be broken up into two spots, one linear, humeral, and a larger, rounded spot a little below middle, the spot at the extreme apex and the elongate, sub-scutellar spot seem to be quite constant.

This species is figured in Biol. Cent. Am. Col., vol. VI, pt. I, pl. I, fig. 3, as *L. ornata*; a name preoccupied in the genus and changed to *opulenta* by Gemminger and Harold.

Lema confusa Chev.

var. *trabeata* Dej.

var. *omogera* Horn.

Horn's *omogera* is the extreme variation of the variable *confusa*.

Typical *confusa* are black, elytra yellow, an entire sutural stripe, confluent with an internally oblique, common, apical spot, and a submarginal vitta, abbreviated at apex and base, black. This has been taken at Enterprise and Crescent City, Florida, by Messrs. Hubbard and Schwarz and at Biscayne Bay, Florida, by Mrs. A. T. Slosson.

The variety *trabeata* has the elytra black with a large subtriangular basal spot, a subapical oblique fascia and lateral margin, which is confluent with the basal and subapical spot, yellow. I have taken this form in Arizona (Huachuca Mts.) and have also a specimen

from Venezuela, collected by George K. Cherrie. In this and the next form the elytra may be black or bluish.

The variety *omogera* is black with a subtriangular yellow basal spot which extends along the base to the lateral margin, the latter is never entirely pale, but black in about apical half or more. As far as known this occurs only in Lower California.

Lema notativentris new species.

Similar in color, form and sculpture to *nigrovittata* Guer. but the lateral black vitta of each elytron is not situated close to the lateral margin but between the sixth and eighth dorsal row of punctures; the black thoracic spot is situated in the lateral depression and scarcely visible from above; head black, also upper edge of femora, tibiæ and tarsi; prosternum largely, mesosternum and metasternum entirely black; abdomen pale except a rounded, black spot, situated at middle of the basal margin of the first four ventral segments. Length 5.5 mm.

Huach. Mts., Arizona.

This species looks superficially so much like *trilineata* or the less heavily marked forms of *nigrovittata* that I did not recognize it in the field and only lately, in going over some unmounted material I found a few specimens pasted on cards with specimens of *nigrovittata* from the same locality.

Anomœa nitidicollis new species.

Above reddish-yellow, elytra with suture, a common post-median sutural spot, an elongated spot on lateral margin about middle and lateral margin, from about middle to apex, black; legs, meso and metasternum black. Head smooth, shining, without punctures and scarcely rugose in front. Prothorax strongly transverse; lateral margin arcuate, gradually narrowing to apex from a little below middle to apex; apical and basal angles, the latter more strongly, rounded; surface very shining and impunctate. Scutellum black, with a few moderately coarse punctures and fine pale hairs in basal half. Elytra less shining than the prothorax, sparsely punctate, punctures confused but showing a tendency to become regular, especially near suture; metasternum and abdomen finely and moderately closely punctate and closely pubescent with greyish-white hairs. Length 9.75 mm.

Texas.

A single specimen, a female, in the Dietz collection which probably came from New Braunfels, Tex.

The smooth, very shining head and prothorax, the more elongate

form and the different coloration of the upper surface separates this principally from females of *mutabilis*. Of the latter I have quite a number of specimens from Brownsville and New Braunfels, Texas, but while the males are very variable in coloration, the females vary very little and have the prothorax always more or less dull.

Anomœa mutabilis Lac.

I have taken this species in Brownsville, Tex., and have it also from New Braunfels. The males are very variable in coloration. Specimens occur which nearly agree with the description of *A. rufifrons* Lac. and I believe that the two are the same species. The most extreme variation I have seen has the prothorax and head fulvous the latter with the space behind the eyes and the occipital spots black, legs pale, except the tarsi and front tibiæ; elytra ochraceous with suture, a median marginal blotch and an elongate discal spot about middle of each elytron black.

Anomœa högei Jac.

In Science Bull. Mus. Brookl. Inst., vol. I, p. 229, I reported the occurrence of this Mexican species in our fauna of which I had two males and three females from New Braunfels, Texas, and have since seen more. Mr. Jacoby described it from one male and three females and distinguishes this from the other species of the genus mainly "by the absence of any dark markings above, the whole upper surface being fulvous." My two females agree exactly with his description but in one of the males the abdomen is black at sides and in the other entirely black, the scutellum in the latter is also black but at apex pale. The males have the front tibiæ near apex more strongly curved than in *mutabilis* and *laticlava* and the antennal joints in both sexes are more transverse and stronger serrate than in the latter species.

Anomœa (Gynandrophthalma) arizonica new species.

Moderately elongate, nearly parallel; shining, black, underside of anterior tibiæ and tarsi, first three antennal joints and labrum pale; prothorax with an obscure reddish cloud on the disk; elytra blue with a relatively large red basal spot, as in *Saxinis omogera*. Head between the eyes at middle with a more or less distinct rounded impression; shining and feebly punctate on the occiput, otherwise somewhat rugose and more coarsely but sparsely punctate; antennæ serrate from the fourth joint, the serrate joints transverse. Pro-

thorax about twice as wide as long, sides feebly arcuate; posterior angles broadly rounded, anterior angles indistinct, rounded; disk slightly uneven, punctuation very fine and with some coarser punctures at sides and anteriorly intermixed. Elytra moderately coarsely and irregularly punctate; punctures near apex more or less obliterated; intervals very finely punctulate. Under-side moderately densely clothed with white hairs. Length 4.5 mm.

Huachuca Mts., Arizona.

This species varies a little. The front tibiae are occasionally entirely black; the prothorax black or with more or less distinct, though obscure reddish patches; the lateral elytral red spot, which never extends down as far as the middle, is towards its apex more or less dilated and extends in some specimens to the suture, but leaving the scutellar region dark blue.

This is possibly only a local form of *A. militaris*, Lec., but it is of a little more elongate form and without the red apical spot on each elytron. I have seen about eighteen specimens but while the red humeral spot is very variable in size in none of these is any indication of an apical spot.

Anomaa humerigera, described from a single female from Mexico by Lacordine, seems to be very close to this, but the elytra in the Arizona specimens are not finely alutaceous. *A. arizonica*, and very likely *militaris* and *humerigera*, possibly belong in Lacordarie's subgenus *Gynandrophthalma* as the two sexes are nearly alike. In the subgenus *Anomaa* the males generally differ very much from the females in the form of head, prothorax, elytra, anterior tibiae and often greatly in coloration.

***Chlamys memnonia* Lac.**

In Proc. U. S. Nat. Mus., vol. XX, p. 476, Mr. Linell deals at length with this species, which he recorded from Brownsville and San Diego, Texas, and from southern Arizona. From his remarks it is evident that the Arizona specimens differ from those taken in Texas but he was unable to find any specific characters to separate them and considered them all one variable species.

I have this species from Brownsville and New Braunfels, Texas, and have also taken specimens in the Huach. Mts., Ariz. However, the specimens from Arizona differ sufficiently from those taken in Texas to entitle them to a name.

***Chlamys confusa* new species.**

Similar in form, color and sculpture to *memnonia* Lac. but the elytral tubercles and ridges are less strongly developed, the prothoracic crest is lower and less deeply impressed, the true scutellum narrower and the second, or metascutellum, rarely as distinct as in that species and sometimes absent. At the bottom of the emargination of the eyes is an orange-yellow spot as in *plicata* and *tuberculata*, which is absent in *memnonia* and *prosternalis*. Length 4 mm.

Huachuca Mts., Arizona.

Besides the less developed elytral tubercles and ridges the small, yellow spot inside of each eye separates this species readily from *memnonia*.

The elytral sculpture varies to some extent but is in the largest specimens never as strongly developed as in typical *memnonia*. It is possible that this species is the same as *mæstifica* Lac., which was described from specimens from Mexico and also two from California. However, none of my specimens do exactly agree with Lacordaire's description of *mæstifica*.

In Biol. Cent. Am., Col. vol. VI, pt. I, p. 75, Mr. Jacoby places *Chlamys memnonia* rather doubtful in the genus *Diaspis*. The principal characters of this genus are the possession of a second scutellum, termed by Lacordaire the metascutellum, and the bifid claws. In *C. confusa*, the second scutellum is almost absent or very faint in a few specimens and Linell mentions a specimen of *C. plicata* with a second scutellum so this character becomes valueless and there remains only the bifid claws. These are in *memnonia*, *confusa* and *prosternalis* broadly appendiculate at base as in *plicata* and these species cannot be placed properly in *Diaspis*.

***Urodera texana* new species.**

Rather shortly oval, black, elytra reddish-yellow, except suture margin narrowly and an oblique, arcuate median band black. Head nearly smooth with only a few small punctures which are near the eyes larger. Prothorax about one and one half times as wide as long; median basal lobe not reflected; surface sparsely and rather finely punctate. Scutellum smooth. Elytra with rows of rather fine punctures; intervals smooth, except for a few very small adventitious punctures. Underside and pygidium rather closely punctate and covered moderately densely with short greyish-white hairs. Length (from apex of prothorax to apex of elytra) 6 mm., width 4.25 mm.

Brownsville, Texas.

This species differs from *crucifera* Lac., that is, the North American specimens identified as that species, in being shorter and consequently more robust, the prothorax though finely but distinctly punctate, the median basal lobe of prothorax not at all reflexed, more or less distinctly so in the specimens of *crucifera* collected by myself and others in Arizona, and the epipleural lobe is more subangulate.

Cryptocephalus pinicolus new species.

Narrower and a little more elongate than *quadrifasciatus* Say, prothorax distinctly dark metallic blue, elytra black with a bluish tint, an elongate humeral spot, extending inwardly to the fifth or sixth dorsal stria and a sub-apical spot red. Head sparsely punctate with moderate punctures; antennæ as in *quadrifasciatus*. Prothorax rather finely and sparsely punctate, punctures larger near base. Elytra not as coarsely punctate as *quadrifasciatus*; intervals smooth. Pygidium coarsely and rather densely punctate with a more or less distinct median carina. Abdominal segments two, three and four closely and moderately coarsely punctate, each puncture bearing a very short, pale hair. Last ventral segment of the female with a very large, deep, circular fovea. Length 3.5 mm.

Huachuca Mts., Arizona.

Two of the few specimens are marked "beaten from pine." The narrower and relatively more elongate form and the distinct dark metallic blue color will separate this from *quadrifasciatus* or *quadripunctatus*. Specimens of *quadrifasciatus* especially those from the South have at least the prothorax more or less blackish blue, but the form of these is more robust and the elytral punctuation is more coarse. The apical read spot is absent in one specimen.

Cryptocephalus pubiventris new species.

Similar in coloration to *C. quadrifasciatus* var. *notatus* Fab. but much larger. Head closely punctate with moderately large punctures, median line without punctures. Prothorax less transverse and relatively a little longer than in the var. *notatus*; distinctly punctate, but punctures not close and moderately large. Elytra with rows of moderately large, not closely placed punctures. Underside densely punctate, except the first ventral segment on which the punctures are less dense than on the following segments, clothed with relatively long greyish white pubescence. Length 6 mm., width, across the middle of elytra 3.25 mm.

Huachuca Mts., Arizona.

The color is black, except the first four or five antennal joints, and the red markings are as in *quadrimaculatus* var. *notatus*, but the size is much larger, relatively narrower and a little more elongate, with prothorax less transverse and the underside relatively densely pubescent with rather long hairs.

***Cryptocephalus guttulatellus* new species.**

Cryptocephalus quatuordecimpustulatus Schæf. nec Suffr.

Shining, flavous, prothorax a little darker, except a pale transverse basal fascia not reaching the middle nor the sides; elytra marked with longitudinal and transverse pale brown lines as in *guttulatus* Oliv. Head almost smooth, only a few sparse frontal punctures; antennæ with the last three or four joints darker. Prothorax relatively less convex than in *guttulatus*, smooth, with at most a few very small punctures. Elytra rather feebly impressed below the subhumeral umbone; striæ as in *guttulatus*, here and there feebly impressed, punctures moderate. Pygidium coarsely and moderately closely punctate, with at most a few scattered, short hairs. Length 2.75 mm.

Brownsville, Texas.

In Journ. N. Y. Ent. Soc., vol. XII, p. 226, I reported this species as the Mexican *14-pustulatus* Suffr. which is a much larger insect. The above described species is about the size of *ocellatus* Suffr. and similarly marked but the color of the head and prothorax is not "rostrath" and the pygidium is not finely punctate and pubescent.

***Metachroma texanum* new species.**

Oblong, shining, rufocastaneous, elytra, except suture, legs and antennæ paler, the apical joints of the latter infuscated. Head coarsely punctate on occiput and clypeus, faintly and more sparsely at middle; frontal impression rather feeble; clypeo-frontal suture obliterated. Prothorax wider than long; sides rather strongly arcuate; apical and basal angles prominent; surface with moderately large punctures which are coarser at sides but finer near apex and base. Elytra slightly longer than wide at middle, with regular rows of rather coarse punctures, which are finer towards apex and base; the two short striæ, external to the seventh, absent; intervals smooth. Body beneath sparsely punctate; propleuræ at base with a few punctures; met-episterna almost smooth; posterior femora with a small tooth on the lower edge. Length 3 mm.

Brownsville, Texas.

This and the following new species are distinguished from all our species with a denticle on the lower edge of posterior femora by the

absence of the two short striæ. Dr. Horn in Trans. Am. Ent. Soc., vol. XIX, p. 211, says that the species of this genus have eleven striæ on each elytron, seven between the suture and the umbo and two parallel with the side margin. Between these two series, just exterior to the seventh, are two short striæ, which may be regular or confused. Dr. Horn evidently did not count the short scutellar nor the marginal stria. With a few exceptions the stria next to the marginal one is rarely entire, it generally joins the marginal stria about middle or the basal part a little above middle and the apical part a little below middle.

Metachroma novemstriatum new species.

Oblong, shining, above yellowish-testaceous, prothorax a little darker; each elytron with two darker spots, one above middle, between the fourth and fifth striæ, the other below middle and between the sixth and seventh striæ; body beneath dark brown; antennæ pale. Head sparsely punctate, occiput more coarsely punctate; clypeus moderately coarsely punctate; frontal impression distinct; clypeo-frontal suture obliterated. Prothorax a little wider than long; sides moderately arcuate; apical and basal angles prominent; surface moderately coarsely punctate, punctures finer near apical, lateral and basal margins. Elytra a little longer than wide across the middle; striate-punctate, striæ regular, short striæ absent; intervals very feebly punctate. Propleuræ without punctures. Body beneath sparsely punctate; met-episterna smooth; posterior femora with a very small denticle. Length 3.75 mm.

Lower California (G. Beyrer).

Colaspis subænea new species.

Form and size of *C. brunnea*; shining; upper surface brown with distinct metallic tint; below and legs slightly paler, except metasternum, which is darker and with metallic tint; labrum, palpi and antennæ flavous, the seventh, tenth and eleventh joints of the latter black. Head rather sparsely, not coarsely punctate; epistoma more coarsely and closely punctate. Prothorax moderately closely punctate at sides, punctures finer on the disk, sides feebly arcuate from base to a little above middle, then more strongly narrowing towards apex; apical angles obtuse; basal angles prominent. Elytra scarcely wider at base than the prothorax; punctuation coarse and rather confused in about basal half; more regular from the middle towards apex where the intervals are more or less distinct and subcostate near apex; sutural angles acute, slightly prominent. Propleuræ, metasternum and ventral segments sparsely punctate. Length 4 mm.

Brownsville, Texas (O. Dietz).

This species differs from *brunnea* and varieties in having the upper surface shining and dark with distinct metallic tint and the intervals scarcely raised, except at apex. A specimen taken by myself at the same locality in August is apparently partly immature and has the elytral punctuation finer than in the type specimen.

***Colaspis brunnea* var. *viriditincta* new var.**

Form and size of *C. brunnea*; head and prothorax metallic green and cupreous; elytra yellowish testaceous, scutellum, base narrowly, lateral margin, and generally the punctures metallic green; abdomen beneath with metallic tint; legs flavous, hind femora black at tip; palpi and antennæ flavous, except the seventh and the two last joints, which are black. Head relatively more closely punctate than in var. *costipennis*; punctures at sides above the eyes more or less confluent. Prothorax as in var. *costipennis*. Elytra with seven, more or less distinct costiform intervals. Length 4.5 mm.

Douglas, Arizona (F. H. Snow).

This form differs from var. *costipennis*, which also has a bright metallic head and prothorax, in having seven, more or less distinct elytral costæ.

***Nodonota texana* new species.**

Oblong, bronze, surface alutaceous and moderately shining. Head moderately coarsely punctate, punctures a little finer and sparser above; clypeus not contracted. Antennæ rufo-testaceous, the outer joints piceous at apex. Prothorax a little more than twice as wide as long, sides arcuately narrowing from base to apex; basal and apical angles subacute; surface very distinctly alutaceous and moderately coarsely punctate, punctures scarcely denser at sides than on disk. Elytra irregularly punctate; punctures a little coarser than on the prothorax, but gradually finer towards apex, where they are less confused; umbo prominent and prolonged posteriorly with a distinct impression internally. Body below alutaceous; propleuræ sparsely punctate; abdomen sparsely punctate. Legs rufo-testaceous. Length 3.25 mm.

Brownsville, Texas.

I have taken only a single specimen, a female, of this species, which I had placed doubtfully with *puncticollis*. It is, however, narrower, more elongate and less convex than the latter and the punctures of the prothorax are not substrigose. Another specimen, without tarsi, is in the Dietz collection from "Texas," which is probably a male. It is a little more shining, prothorax more finely alutaceous and the umbo, though moderately prominent, is not prolonged posteriorly.

Melasoma (Lina) californica Rog. and *arizonæ* Cr.

The following new genus is proposed for the reception of these two species which do not belong in the genus *Melasoma (Lina)*, where they are placed in our list. They look, in fact, out of place there.

***Pseudolina* new genus.**

Differs from *Melasoma (Lina)* in having the prothorax arcuately narrowing from base to apex, without longitudinal lateral impression; the sides of prothorax and elytra not thickened; metasternum broadly arcuate in front, not produced between the middle coxæ and the tibiæ are not grooved externally, except more or less distinctly at tip.

Type *Plagioderia californica* Rog.

Plagioderia, to which this new genus is also related, has the metasternum distinctly produced between the middle coxæ as in *Melasoma* and the elytral epipleuræ are deeply, longitudinally excavated. *L. arizonæ* Cr., which occurs also in Mexico, is placed in the genus *Plagioderia* by Mr. Jacoby.

Melasoma tremulæ Fab.

The North American specimens identified as *M. tremulæ* Fab. are in my opinion *M. salecei* Reit. At any rate they seem to agree with the description of the latter species better than with the description of *M. tremulæ*.

Melasoma immaculata new species.

Ovate, shining; elytra luteous, immaculate; scutellum, prothorax at sides pale yellow, at middle and head black with faint metallic tint; antennæ pale, first and outer four joints darker; underside pale, except metasternum, a transverse fascia on each ventral segment, which is broadly arcuate at middle, femora, except at base, and apex of tibiæ black with more or less metallic green or blue tint. Head broadly impressed at middle; finely, not closely punctate, with sparser larger punctures intermixed. Prothorax about twice as wide at base as long, sides gradually narrowing from base to a little below apex, then arcuate to apical angles, which are rounded; basal margin distinctly bisinuate; apical margin broadly, rather deeply emarginate; surface on the disk finely punctulate with some sparser, larger punctures intermixed; laterally relatively coarsely punctate, the punctures in the lateral impression rather crowded. Scutellum smooth, shining. Elytra irregularly punctate, punctures not coarse; the thickened lateral margin smooth. Ventral segments with transverse row of punctures near apex, at sides more or less finely, transversely rugose. Length 5.25 mm.

Washington.

I have also specimens from British Columbia collected by the late J. Chr. Weidt. Two of the specimens from the latter locality are dark brown with faint metallic tint and differ from *confluens* with uniformly colored elytra in less elongate form and bicolored ventral segments and legs. *M. obsoleta* has always a pale lateral margin and the ventral segments dark metallic blue, the last segment at apex and sides and the penultimate at sides pale.

Melasoma obsoleta Rog.

This is a variable species. The darkest forms have the elytra black or purplish black with pale lateral margin and the extreme palest form has the elytra flavous with markings like *scripta* with which specimens of the latter form are found in collections. Intermediate forms between the two, elytra black with more or less distinct pale spots, or the elytra pale with the dark spots and lines more or less confluent are found together with the two extreme forms mentioned above. *M. obsoleta* is relatively shorter, more convex and has the prothorax more transverse than *M. scripta*.

Melasoma scripta var. **texana** new var.

Form, size and coloration generally like typical *scripta*, but prothorax, elytra and epipleura relatively more coarsely punctate. Head and prothorax pale ferruginous with a faint metallic tint; the median part of prothorax sometimes darker, but apparently never as decidedly metallic green as in typical *scripta* or the maculate specimens of the var. *confluens*. Underside pale ferruginous with metallic tint, sometimes abdomen and sides of metasternum more or less metallic green. Legs pale with faint metallic tint, or tibiæ darker and femora largely metallic green.

Brownsville and New Braunfels, Texas.

The var. *texana* looks very distinct from typical *scripta* and maculate *confluens* and seems to be very near the Mexican *M. depressa*. The third antennal joint is relatively a little longer than in typical *scripta*. The head and prothorax is generally reddish with metallic tint and the elytra are usually as heavy or heavier marked than in typical *scripta*.

Plagioderia flosculosa Stal.

This is the *Lina flosculosa* of our list, which possibly does not occur in the United States. Stal's specimen was without locality but

it has been recognized from Mexico by Mr. Jacoby in Biol. Cent. Am., vol. VI, pt. I, p. 193, and is figured on tab. X, fig. 1 as *æneiventris*. It is not a *Lina* but a *Plagioderia*, at least, it is recorded under the latter genus by Mr. Jacoby.

***Zygogramma estriata* new species.**

Reddish-brown, elytra flavous with subsutural vitta confluent with the narrow sutural vitta, the former not reaching quite to base and of rather irregular outline and a number of relatively large, reddish-brown spots, which are surrounded by moderately large punctures. Head sparsely punctate. Prothorax strongly transverse, apical angles rounded; sides feebly arcuate; basal margin moderately arcuate; surface finely alutaceous with very few punctures, which are more numerous and coarser towards the lateral margin. Elytra convex; flavous with sutural and subsutural vitta confluent and numerous spots of variable shape reddish-brown, the punctures between these spots brown and not densely placed; the regular row of submarginal punctures absent; epipleuræ pale, except the exterior margin which is reddish-brown. Body beneath reddish-brown with very faint metallic tint; metasternum and abdomen sparsely punctate with moderately large punctures. Length 5.75 mm.

Huachuca Mts., Arizona.

This species is apt to be taken for a var. of my *Z. arizonica*, from the same region, in which the irregular dorsal vitta is broken up into spots. It differs, however, from that species by having a pale elytral epipleura and the absence of the regular row of punctures near side margin, which latter is present in all our species of *Zygogramma*. The form is also a little shorter and more convex than in *Z. arizonica*.

***Phyllobrotica vittata* Horn.**

My series of this species which are mostly from New York and New Jersey, show more variation than indicated by Dr. Horn from his four specimens in the remarks following the description.

The head above is generally black and in front yellow, but occasionally entirely yellow. The elytral vitta is more or less distinct or entirely absent and the ventral segments black, or the segments black with yellow margin, sometimes entirely yellow. The males have the antennal joints stouter than the females and the outer joints distinctly dilated.

***Agelastica alni* Linn.**

Three specimens of this European species were collected by Mr. G. P. Engelhardt on his office window of our Museum.

It is a large insect, similar in form to *Homophæta abdominalis* but a little more robust and entirely blue above. It belongs in the Galerucini and is placed in European catalogues in the neighborhood of *Exosoma*.

***Ædionychis nigrosignata* new species.**

Form of *scalaris* Melsh.; flavous, shining; elytra with a common sutural spot about basal fourth and six spots on each elytron black, one on the humeral umbone, two at side margin, one about basal fifth and one slightly below middle, the other three are situated on the disk of which the one a little below middle is the largest, the upper one at about basal fourth and the apical spot at about apical fourth. Head impressed between the antennæ and more or less distinctly punctate, above smooth. Prothorax impunctate and shining. Elytra very minutely punctate and shining. Abdomen distinctly but rather sparsely punctate. Length 5 mm.

Brownsville, Texas.

This is undoubtedly the same as the Texas specimen mentioned by Dr. Horn in Trans. Am. Ent. Soc., vol. XVI, p. 195, in the remarks following the description of *scalaris*. It is relatively a little narrower than *scalaris*, the upper surface very shining and the elytra minutely punctate. The antennæ are pale with the eighth and ninth joints infuscate. The black common sutural spot is variable in size and often absent, the upper submarginal spot is also absent in one or two specimens. The umbonal sulcus, prominent in *scalaris*, is in *nigrosignata* very feeble. The punctuation of the head is variable, in those with the interocular impression more feeble the few punctures are much smaller than in those with a broad median impression. The var. b. of the Mexican *Æd. signata* Jac. seems to be the only species from that region with which *nigrosignata* can be compared. However, the position of the four anterior spots in the former species is different and there is apparently no common sutural spot.

***Disonycha quinquevittata* Say.**

As defined by Dr. Horn this species is certainly an assemblage of very heterogeneous forms. Some of these have undoubtedly a name and are entitled to at least varietal standing but the descriptions are poor and it is necessary to make comparison with the types.

Disonycha capitata Jacoby.

D. capitata Jac. Biol. Cent. Am. Col., vol. VI, pt. 1, p. 316.

D. quinquevittata Jac. Biol. Cent. Am. Col., vol. VI, pt. 1, suppl. p. 276.

? *D. pura* Lec. Proc. Acad. Nat. Sc., 158, p. 86.

I have specimens from Phoenix, Ariz., which agree with the description of the above named species. The head is black at base and is generally more densely punctate than in any other species; labrum black, the surface of prothorax has usually only two black spots; each elytron with the usual black lines but they are mostly narrower and the submarginal one is sometimes obliterated or absent; the body beneath flavous, femora a little darker, apex of tibiæ and tarsi black; punctuation of prothorax and elytra extremely fine or obliterated, but this is variable, in some specimens the punctuation of prothorax is distinct.

If my specimens are correctly identified as *D. capitata* Jac. there is another character not pointed out by Mr. Jacoby, and that is the relatively narrower prothorax in this species than in any of the different forms united under the name *quinquevittata*. There is a possibility that *D. pura* Lec. is the same, in which case this name has precedence.

Jacoby, very likely following Horn, places this species in the "Supplement" as a synonym of *quinquevittata*, but it ought to be recognized at least as a variety.

Disonycha fumata Lec.

D. fumata Lec. Proc. Acad. Nat. Sc. Phil., 1858, p. 86.

? *D. crenicollis* Horn. Trans. Am. Soc., vol. XVI, p. 204.

D. fumata Lec. is placed by Dr. Horn, l. c., p. 315, as a synonym of *quinquevittata* but I think wrongly. In none of the forms of the latter the two median thoracic spots are placed as closely together that they occasionally form a large central spot as described by Lecomte nor is the underside "fusco-nigris" and anterior femora "fusco-testaceis." *D. crenicollis* Horn is the only species known to me to which this applies.

D. crenicollis Say was described from Mexico and it is rather doubtful that this species occurs in the United States, at least Dr. Horn's identification of that species does not agree with Say's description, which is given below.

"*A. crenicollis*.—Yellowish; thorax five-spotted; elytra with black vittæ. Inhabits Mexico.

"Body pale yellowish; antennæ blackish; three basal joints honey-yellow, with a black line above; vertex with a black spot, thorax with two small dots, and an abbreviated line arranged triangularly, black, and a lateral, somewhat larger, oblique, oval indented black spot; scutel black; elytra impunctured, destitute of striæ; a common sutural black vitta, another in the middle, somewhat narrower than the intervening portion, and a submarginal one; pectus yellowish; postpectus and venter black, the latter with yellowish margins to the segments; feet honey-yellow; tibiæ and anterior and intermediate thighs with a black line. Length $\frac{1}{5}$ of an inch."

According to the above description *crenicollis* has a five-spotted prothorax, a median elytral vitta which is a little narrower than the preceding yellow space; the underside yellowish, except the metasternum and abdomen, which are black, the abdominal segments with yellow margin; legs honey yellow, tibiæ, anterior and intermediate femora with a black line above. Dr. Horn's *crenicollis* has the median elytral vitta as wide or wider than the yellow space on either side, the abdomen yellowish or pale brown, the tibiæ and tarsi piceous, and the femora, especially the posterior one, more or less infumate and darker. Dr. Horn also states that it occurs from New York to southwestern Texas and Mexico, but I am rather doubtful of the occurrence of this species so far north. In the New Jersey list Prof. Smith records it from Hudson Co., Delaware valley and the Pine barren as not rare, but they are undoubtedly wrongly identified. A specimen from New Jersey received from Mr. Chas. Liebeck as *crenicollis* and others from various places in New Jersey, from Long Island and Kansas differ too much from the Texas specimens to be considered the same. These specimens are less elongate, the antennal joints decidedly shorter and stouter and the prothorax and especially the elytra generally distinctly punctate. They are very close to *arizonæ*, except that the abdomen is more densely punctate and the femora are generally clouded. It is possible that these are *punctigera* Lec. described from Kansas which name was placed as synonym of *quinquevitta* by Dr. Horn.

Disonycha quinquerrutata new species.

Above flavous; head behind the eyes slightly darker, antennæ except the first joint below, two transverse spots on prothorax, a little above middle, scutellum, a sutural, discal and marginal vittæ black, the discal vitta narrower than the pale space on each side; a short line below the two discal spots on the prothorax and a more or less distinct larger lateral spot castaneous; body below pale except metasternum, posterior femora and tibiæ at apex and tarsi black.

Head shining, moderately coarsely punctate near each eye, median part smooth; tubercles distinct and slightly darker; antennæ long, reaching beyond the middle of elytra, joints rather narrow, third joint about twice as long as second, fourth about as long as second and third together, from the fourth slowly decreasing in length. Prothorax about twice as wide as long; sides feebly arcuately narrowing to apex; basal angles rounded; apical angles feebly thickened, oblique; surface smooth, shining. Elytra at base a little wider than the prothorax at base; sides feebly arcuate; surface minutely obsolete punctate. Ventral segments of abdomen very densely and finely punctate; pubescence moderately long and dense. Length 5.75 mm.

Bill Williams Fork, Arizona, F. H. Snow (type); S. W. Utah (J. Chr. Weidt).

I received this species as *crenicollis* (*fumata* Lec.?) from Prof. Snow, near which it has to be placed. The form is slightly narrower, the antennæ longer and the coloration is different. The Utah specimen I bought some years ago from J. Chr. Weidt with the above name attached to it and supposed to be given by Dr. Horn, who identified some of his material.

Disonycha latifrons new species.

Above flavous; head behind the eyes, labrum, antennæ, except the first joint below, two transverse spots on prothorax a little above middle, scutellum and a sutural, discal and marginal vittæ black, the discal vitta narrower than the pale space on each side; body below black, except underside of prothorax, median part of mesosternum, and apex of penultimate and last ventral segment flavous; femora reddish-yellow, without black line above; tibiæ and tarsi black.

Head smooth, shining, a few punctures near each eye; frontal tubercles indistinct, the space between the antennal insertion and apex scarcely convex; antennæ reaching to about middle of elytra, third joint longer than second but distinctly shorter than fourth, from the fourth gradually decreasing in length. Prothorax about twice as wide as long; sides feebly arcuately narrowing to apex; basal angles obtuse, feebly rounded; apical angles slightly thickened and a little prominent; surface smooth, shining. Elytra at base scarcely wider than the prothorax; sides feebly arcuate; surface minutely reticulate

and with fine punctures. Ventral segments of abdomen rather densely punctate and rugulose; last segment sparsely punctate and rather smooth; pubescence moderately dense. Length 6.25 mm.

Fort Defiance, Arizona.

The type is in the Museum collection, others are in the collections of Messrs. Wm. T. Davis and Ernest Shoemaker, to whom I am indebted for specimens.

Following Dr. Horn's table this species would be associated with his *crenicornis*, from which it differs in having stouter and shorter antennæ, the surface of the head smooth and even, the frontal tubercles obliterated and the decidedly black underside. The sculpture of the last ventral segment is in most of the species generally a little sparser than on the other segments but in this species the sculpture of the last ventral contrasts from that of the other segments, being nearly smooth and the punctuation sparse.

Disonycha lodingi new species.

Form and coloration almost as in *caroliniana*. Head smooth, shining, with a few punctures in a fovea-like impression near each eye; frontal tubercles distinct; antennæ rather narrow and elongate, reaching to or a little beyond middle of elytra, third joint longer than second, but not twice as long, fourth longer than second and third together, from the fifth gradually decreasing in length. Prothorax fully twice as wide as long; sides gradually narrowing to apex; basal angles distinct but obtuse; apical angles oblique; surface smooth and shining. Elytra at base scarcely wider than the prothorax at base, sides arcuate; surface minutely reticulate with minute, obsolete, sparse punctures. Ventral segments of abdomen densely punctate and pubescent. Length 6 mm.

Delchamps, Alabama (H. P. Loding).

In form and coloration this species looks at first sight almost exactly as *caroliniana* but the antennæ are much longer with narrower joints and the ventral segments are more densely punctate than in that species.

Disonycha alabamæ new species.

Oblong oval; above flavous; labrum, antennæ except the first three joints, scutellum, a sutural, discal and marginal vitta black; the discal vitta broad but placed nearer the lateral margin than the suture, and much wider than the outer pale space but much narrower than the inner pale space. Below pale, except the tibiæ near apex and tarsi black.

Head shining, moderately coarsely punctate above between the eyes, leaving, however, a narrow, somewhat elevated smooth space at middle; frontal tubercles distinct but flat; antennæ scarcely reaching to the middle of elytra, joints rather short and stout, second very smooth, third longer, but scarcely as long as the first, the following joints equal or subequal to the third. Prothorax slightly more than twice as wide as long; sides arcuate and feebly narrowing to apex; basal angles distinct, obtuse; apical angles slightly rounded; surface minutely alutaceous with small, sparsely placed punctures. Elytra not wider at base than the prothorax; feebly shining, but minutely reticulate, and finely punctate, punctures small and well separated. Ventral segments of abdomen shining and relatively very sparsely punctate; feebly pubescent. Length 5 mm.

Citronella, Alabama.

I have seen two specimens of this distinct little species and both collected by Mr. Loding; one of these is in his collection.

From all our vittate species it differs in the position of the dorsal vitta which is situated much nearer to the marginal than to the sutural vitta. In Dr. Horn's arrangement it has to be placed near *arizonæ*.

Disonycha discoidea Fab.

Var. *D. abbreviata* Melsh.

One of my specimens of *discoidea* from Kentucky has on each elytron a pale, subbasal spot in the centre of the black discoidal blotch, and also the apex of this spot is irregularly indented, suggesting the possible occurrence of specimens with a more or less well defined vitta. Vittate specimens would be very near *abbreviata*, which suggested to me the possibility of *D. abbreviata* being only a variety of *D. discoidea*. However, my specimens of the former were all from New Braunfels or Brownsville, Texas, and showed sufficient differences to discard this view. Lately in some material, loaned to me by Mr. Wm. T. Davis, I found a specimen from Kentucky which agrees better with Melsheimer's description of *abbreviata* than the Texan specimens. This is undoubtedly the true *abbreviata*, which was described from Pennsylvania, and nothing more than a variety of *discoidea*. The Texas specimens look superficially very much like typical *abbreviata* but show sufficient constant differences to entitle them to a name.

Disonycha texana new species.

Above flavous; head behind the eyes, labrum more or less, antennæ, except the first joint below, scutellum and a sutural and discal vitta black; the discal vitta about as wide as the pale space on each side; body below pale but metasternum, tibiæ more or less and tarsi black.

Head smooth and shining, near each eye a foveiform puncture, frontal tubercles scarcely distinct; antennæ short and stout, reaching to about middle of elytra; second joint small, third longer but shorter than first, fourth a little longer than third, from the fifth feebly decreasing in length. Prothorax about twice as wide as long; sides feebly rounded and gradually narrowing to base; basal angles obtuse; apical angles slightly thickened and feebly rounded; surface smooth, shining; elytra slightly wider at base than the prothorax; sides feebly arcuate; surface moderately showing, sparsely and very minutely punctate. Ventral segments shining, sparsely punctate; pubescence short and sparse. Length 5.25 mm.

Brownsville (type) and New Braunfels, Texas.

This species undoubtedly stands in collections as *abbreviata*, but is more parallel, the elytra almost smooth, the antennæ shorter, and the scutellum and metasternum are always black. The Mexican specimens recorded with a little doubt as *abbreviata* by Mr. Jacoby in the *Biologia* seem to be the same as the Texas specimens.

Phyllotreta liebecki new species.

Similar in form and color to *vittata*, but surface smoother and a little more shining and æneous; elytra with a moderately broad yellow vitta; extending to the extreme apex incurved at scutellum, dilated below humerus and strongly so near apex, the apical part curved inwards, and extending to the suture. Head alutaceous, distinctly punctate. Prothorax about twice wider than long, sides arcuate, slightly narrowed in front, surface alutaceous, punctures moderately coarse and close. Elytra slightly wider at base than the prothorax, humeri obliquely rounded; moderately coarsely punctate, punctures much finer towards apex. Body beneath piceous, abdomen and posterior femora with a feeble metallic tint; abdominal segments rather sparsely punctate. Length 1.75 mm.

Male.—Last ventral rather feebly lobed with a moderate transverse impression at tip; antennal joints two and three subequal, fourth distinctly shorter than the preceding joint, fifth a little stouter than in *vittata*, sixth short, oval, seventh to tenth subequal and less elongate than in *vittata*, eleventh slightly longer than the preceding joint.

Female.—Third and fourth antennal joints nearly equal, fifth longer than either the fourth or sixth, the latter elongate but shorter and less stout than the seventh, seven to ten equal, eleventh a little longer than the tenth.

Enterprise, Florida.

This species differs from *vittata* by the broad vitta which reaches the apex where it extends to the sides and suture, more distinctly metallic surface, smoother and more shining elytra and different male sexual characters. It seems to be, however, more closely allied to *robusta*, which seems to have a similar vitta but in that species the fifth antennal joint is prolonged at apex and the last ventral has a very deeply impressed median line.

For specimens of this species I am indebted to Mr. Chas. Liebeck who called my attention to the possibly wrong identification of this species as *robusta* by Mr. Blatchley.

A NEW CICADA OF THE GENUS MELAMPSALTA.

By WM. T. DAVIS,

STATEN ISLAND, N. Y.

For some time the writer has been convinced that the little green Cicada mentioned by Thomas Say in connection with his *Cicada parvula*, now considered to be the same as *Melampsalta calliope* Walker, was really a distinct species separated by its smaller head, differently shaped body and genitalia, also by having five apical cells in hind wing.

Pending a longer paper on the genus with illustrations, the following description is presented.

Melampsalta kansa new species.

Type male, Meade, Kansas, July (Warren Knaus). Davis collection.

Allotype female, Tascosa, Texas, June 28, 1919 (Miss M. McGill). Davis collection.

Head small, not quite as broad across the eyes as the width of the pronotum; wings proportionately broader than in *calliope*, uncus when viewed in profile not as curved as in that species; body slim with the sides more parallel than in *calliope*, and in the female the abdomen tapers more gradually. The ocelli are ruby colored as in *calliope*, but the body color and venation of the wings is grass green and not straw colored, and the male is without blackish marks on the thorax. The membranes at the base of both pairs of wings are almost white in color. Beneath the opercula are ample and rounded at the extremities, which come quite close together, whereas in *calliope* the extremities are quite far apart. The notch in the last ventral segment of the female